

First record of the shore fly genus *Ptilomyia* Coquillett (Diptera: Ephydriidae) to the Oriental Region, with description of a new species

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Abstract: Genus *Ptilomyia* Coquillett (Diptera: Ephydriidae) is reported from the Oriental Region and China for the first time. A new species, *P. chinensis* sp. nov., is described and illustrated. A key to the Oriental and Palearctic regions of *Ptilomyia* is given. The types are kept in the Entomological Museum of China Agricultural University (CAU), Beijing.

Key words: Hydrelliinae; Atissini; taxonomy; key

羽水蝇属中国新纪录及一新种描述（双翅目：水蝇科）

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摘要: 羽水蝇属在东洋区首次记录, 同时也是中国首次记录。对新种中华羽水蝇 *P. chinensis* sp. nov. 进行了形态描述和特征图的绘制图并编制了古北区和东洋区羽水蝇属检索表。

关键词: 毛眼水蝇亚科; 隐腹水蝇族; 分类; 检索表

Introduction

The shore flies of the genus *Ptilomyia* are the smallest in the family Ephydriidae (Diptera). It belongs to the tribe Atissini (Cresson 1942) of the subfamily Hydrelliinae (Robineau-Desvoidy 1830), which was erected by Coquillett in 1900. There are 14 known species from the world, of which 3 species in the Palearctic, 2 in the Afrotropical, 7 in the Nearctic, 6 in the Neotropical regions (4 species are common in the Nearctic and Neotropical regions) (After Mathis & Zatwarnicki 1998; Stuke 2012).

Accepted 7 December 2018. Published 25 March 2019. Published online 19 March 2019.

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The adults of some species of *Ptilomyia* have been encountered in the sandy shore habitat along the North American east coast. Females of some species are too similar to be distinguished (Stuke 2012).

In this paper, *Ptilomyia* is newly recorded from the Oriental Region, and from China for the first time. A new species presents in the Oriental and Palaearctic regions, *P. chinensis* sp. nov., is described and illustrated.

Material and methods

The specimens were studied and illustrated with OLYMPUS SZ61. The specimens' photos were taken by OLYMPUS U-CTR30-2 and Canon DS126231. Genitalic preparations were made by macerating the apically portion of the abdomen in warm 10% NaOH for 17–20 min, after examination it was transferred to fresh glycerine and stored in a microvial pinned below the specimens. Illustrations of the male terminalia were drawn with coordinate paper and pencil then redrew it with parchment paper and Rotring Rapidograph Technical Drawing Pen. Draws were scanned by EPSON PERFECTION V200 PHOTO. Photos and draws were processed with Adobe Photoshop CC. The specimens examined were deposited in the Entomological Museum of China Agricultural University (CAU), Beijing.

One head and three venation ratios used in the descriptions are defined below: 1. Cheek-to-eye ratio is the genal height measured at the maximum eye height divided by the eye height. 2. Costal vein ratio: the straight line distance between the apices of R_{2+3} and R_{4+5} (costal section III)/distance between the apices of R_1 and R_{2+3} (costal section II). 3. M vein ratio is the straight line distance along vein M between crossvein dm-cu and r-m/distance apical of dm-cu. 4. Wing length-width ratio: distance between wing tip and wing base/ largest distance between anterior margin and posterior margin of the wing (perpendicular to the longitudinal axis).

Taxonomy

Key to Palearctic and Oriental species of *Ptilomyia* Coquillett

1. Costal vein ratio about 1 2
- . Costal vein ratio larger than 1 3
2. Surstylus long *P. madeirensis* (Enderlein)
- . Surstylus short *P. orsovana* Stuke
3. Eye-to-cheek ratio about 0.11, tergite 5 longer than tergite 4 *P. chinensis* sp. nov.
- . Eye-to-cheek ratio about 0.14, tergite 5 as long as tergite 4 *P. angustigenis* (Becker)

Genus *Ptilomyia* Coquillett, 1900

Ptilomyia Coquillett, 1900: 261. Type species: *Ptilomyia enigma* Coquillett, 1900 (original designation).

Atissiella Cresson, 1918: 55. Type species: *Atissiella setulosa* Cresson, 1918 (original designation). — Sturtevant and Wheeler, 1954: 253 [synonymy].

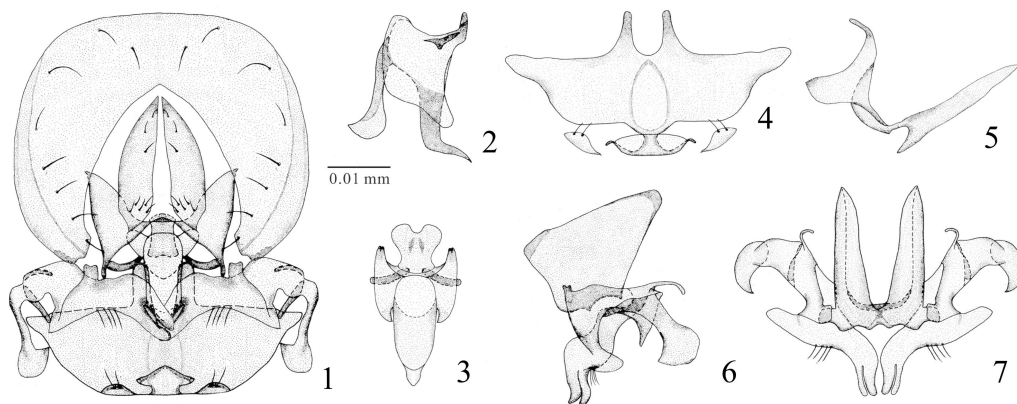
Alocatissa Hendel, 1930: 134. Type species: *Alocatissa lindneri* Hendel, 1930 (original designation). — Wirth 1968: 4 [synonymy].

Diagnosis. Ocellar setae located behind median ocellus; face conically prominent well

above lower facial margin, with a pair of upcurved submedian setae; gena height less than 1/2 of eye height; mouth opening large; proboscis excessively large; palpus slender; scutellum with 2 marginal setae; wing distinctly pointed at apex of vein R_{4+5} , area immediately around crossvein dm-cu usually infumate (After Coquillett 1900; Mathis & Zatwarnicki 1998).

1. *Ptilomyia chinensis* sp. nov. (Figs. 1–10)

Diagnosis. Eye-to-cheek ratio about 0.11; arista dark brown with 4 branches. Mesonotal setulae in irregular 6 rows. Tergite 5 longer than other tergites; surstylus with bifurcate apical projection; sternite 5 with 2 setae.



Figures 1–7. *Ptilomyia chinensis* Wang, Tao & Yang sp. nov., ♂. 1. Male genitalia, posterior view; 2. Aedeagus and phallapodeme, lateral view; 3. Aedeagus and phallapodeme, ventral view; 4. Hypandrium, posterior view; 5. Hypandrium, lateral view; 6. Subepandrial plate and surstylus, lateral view; 7. Subepandrial plate and surstylus, ventral view. Scale bar = 0.01 mm (Figs. 1–3).

Male. Body length 1.1–1.2 mm, wing length 1.1–1.2 mm (Fig. 8).

Head grayish black, with yellowish gray microtomentum; face conically prominent well above lower facial margin in lateral view; eye with fine setulae; gena with gray microtomentum, reaching about 1/4 of first flagellomere. Eye-to-cheek ratio about 0.11. Cephalic setae and setulae black. 1 outer vertical seta; 1 inner vertical seta; 2 fronto-orbital setae, anterior fronto-orbital seta proclinate, posterior fronto-orbital seta reclinate; 1 proclinate setula at same level as posterior fronto-orbital seta; one pair of ocellar setae; 3 facial setae, 1st and 3rd facial setae upcurved, 2nd facial seta incurved; gena with 2 setae at low margin, anterior seta 2 times as long as posterior one, with some setulae behind posterior genal seta. Antennae black except yellow ventrally, with yellow microtomentum, arista dark brown with 4 branches (Fig. 9), pedicel with 2 setae, anterior seta about twice as long as posterior one. Palpus brown with black setulae; proboscis brown to yellow with white setulae.

Thorax black with brown microtomentum, except anepisternum and katepisternum shiny brown with yellow microtomentum. Thorax with black setae and setulae. Mesonotal setulae in irregular 6 rows, a pair of prescutellar acrostichal setae, a pair of prescutellar dorsocentral setae, 1 weak supra-alar seta, 2 notopleural setae; anepisternum with 2 setae and katepisternum

with 1 seta; scutellum with a pair of strong apical setae and a pair of short lateral setae. Legs brown with gray microtomentum, except only apex of tibiae yellow; tarsi yellow except last tarsomere black. Wing light gray; veins yellowish brown; posterior crossvein obscurely gray. Wing length-width ratio 2.3–2.4, C ratio 1.3–1.4, M ratio 0.5 (Fig. 10). Halter yellow.

Abdomen shiny black with gray microtomentum; venter yellow. Relative length of Male tergites 2, 3, 4 and 5 about 0.8: 0.8: 1: 1.25. Setulae on abdomen black.

Male genitalia (Fig. 1). Epandrium blackish brown with many long setae. Cercus slender and long with some setae. Surstylus moderately wide at base, with bifurcate apical projection, a basal stalk narrow, branching at base, and 1 long curved finger like process at base, 4 setae ventrally. Subepandrial plate subtriangular in lateral view (Figs. 6, 7). Aedeagus slightly curved with a dorsal branch. Phallapodeme short and fused with aedeagus (Figs. 1, 2). Hypandrium broad, right-angle curved in lateral view. Sternite 5 with 2 setae (Figs. 3, 4).

Female. Unknown.

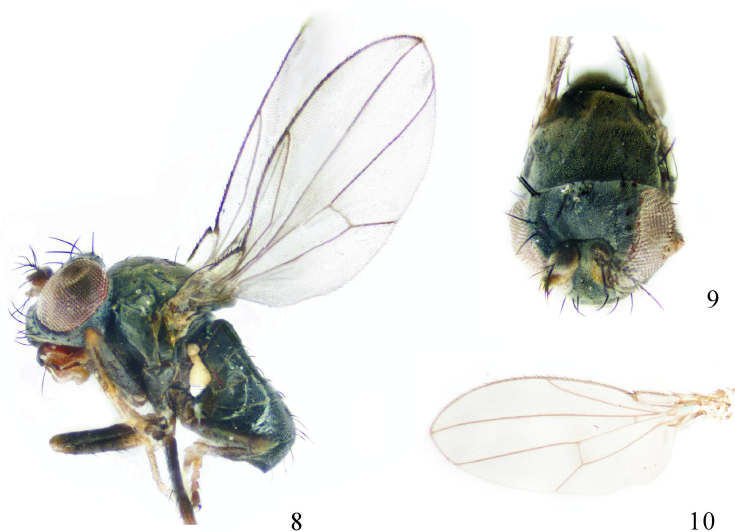
Holotype. ♂, **China**, Hunan Province, Taoyuan, Zhushan, 11-IX-2016, by Liang WANG.

Paratypes. 2♂, same data as holotype; 2♂, Gansu Province, Diebu, Houxizanggou, 18-VIII-2016, by Liang WANG.

Distribution. China (Gansu, Hunan).

Remarks. This new species is very similar with the Palearctic *Ptilomyia angustigenis* (Becker), but is distinguished from the latter by the following features: Eye-to-cheek ratio about 0.11, C ratio 1.3–1.4, tergite 5 longer than other tergites. In *P. angustigenis*, Eye-to-cheek ratio is about 0.14, C ratio 1.5, all tergites are same length (Becker 1926).

Etymology. The specific name is from the type-locality, China.



Figures 8–10. *Ptilomyia chinensis* Wang, Tao & Yang sp. nov., ♂. 8. Habitus, male, lateral view; 9. Wing; 10. Head, anterior view.

Discussion. This species is collected from south part of Gansu and Hunan (Oriental), it is newly recorded species of *Ptilomyia* in the Oriental Region and also in China. Specimens from Diebu (Gansu) share similar habitats with specimens collected in Taoyuan (Hunan); they were

both found in grassland near a stream. This species may be quite common in China but because of its tiny body, no one may notice it.

Acknowledgements

We are very grateful to Prof. Qiang LI, Dr. Li MA, Haixia LU, Xin JIANG, Chunhong WANG, Zhaobo LI (Kunming), Shaolin HAN, and Xiumei LU (Beijing), and Xueqi GUO (Lanzhou) for their kind helps in many ways. The data in this research comes from the database of National Digital-Museum of Animal Specimens; this project was supported by Key Project of Science-Technology Basic Condition Platform from The Ministry of Science and Technology of the People's Republic of China (2005DKA21402).

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